COUNTY OF SAN DIEGO
Great Government Through the General Management System – Quality, Timeliness, Value
DEPARTMENT OF HUMAN RESOURCES

CLASS SPECIFICATION   CLASSIFIED

GEOGRAPHIC INFORMATION SYSTEMS ANALYST TRAINEE	Class No. 003503
GEOGRAPHIC INFORMATION SYSTEMS ANALYST	Class No. 003509
SENIOR GEOGRAPHIC INFORMATION SYSTEMS ANALYST	Class No. 003506

■ CLASSIFICATION PURPOSE

To perform the administration and operational functions of the Geographic Information System (GIS) database for analytical, land use, and environmental purposes; and to perform related work as required.

■ DISTINGUISHING CHARACTERISTICS

The GIS class series is responsible for the creation and analysis of spatial data layers in a large spatial relational database system. This includes, but is not limited to, the maintenance and complex analysis of digital spatial data to support decision-making. This series differs from the Cadastral and Drafting Technician series in that the latter is primarily responsible for maintaining hard copy or CAD maps and official records related to the identification of roads, boundaries, ownership, and property parcels.

GIS Analyst Trainee:

This is the entry-level class. Under immediate supervision, this class is responsible for creating and updating digital GIS database layers and maps, and providing GIS services to users.

GIS Analyst:

This is the journey-level class. Under general supervision, this class is responsible for the design and maintenance of the GIS data structure, data dictionary, and access systems. The analyst may oversee the work of the trainee and has responsibility for data conversion, quality control, and database updates.

Senior GIS Analyst:

This is the lead/supervisory level class. Under direction, this class provides technical guidance and leadership to technical staff within the Health and Human Services Agency (HHSA) and supervises a team of GIS Analysts within the Department of Planning and Land Use (DPLU). The Senior GIS Analyst is responsible for budget preparation, planning, and the development and implementation of highly complex GIS projects within the department.

■ FUNCTIONS

The examples of functions listed in the class specification(s) are representative but not necessarily exhaustive or descriptive of any one position in the class(es). Management is not precluded from assigning other related functions not listed herein if such functions are a logical assignment for the position.

GIS Analyst Trainee

Essential Functions:

1.   Designs and maintains the GIS data structure, data dictionary, and access systems.

2.   Translates planning staff requirements and specifications into functional GIS solutions.

3.   Creates digital maps and/or hard copy maps, plots, and charts.

4.   Prepares online mapping services of GIS data and analytical files available on the Internet/Intranet.

5.   Creates analysis and plot programs using the specified programming language.

6.   Provides GIS technical services and expertise to interdepartmental task forces.

7.   Provides high quality/large scale maps for presentations.

8.   Inputs tabular, mapping, or imagery data using GIS software programs.

9.   Acts as quality control for data created or transferred into the County of San Diego centralized GIS data warehouse (i.e., SanGIS).

10.   Classifies, maps, and records various spatial data into codes using recognized classification systems.

11.   Prepares externally generated spatial data for input into a GIS.

12.   Transforms maps into a digitized format.

13.   Spatially digitizes scanned input, computer disk, or data transfers from external sources.

14.   Operates computer terminals, printers, digitizers, and electrostatic plotters.

15.   Conducts fieldwork to map, survey, and record spatial data with a field data logging Geographic Positioning Systems (GPS) unit as needed.

16.   Provides responsive, high quality service to County employees, representatives of outside agencies, and members of the public by providing accurate, complete, and up-to-date information in a courteous, efficient, and timely manner.

GIS Analyst

Essential Functions:

All the functions listed above and

1.   Assists in the construction of scientific/statistical experiments and analytical computer models to support decision-making.

2.   Assists in the preparation of reports detailing the results of these experiments or model outputs.

Senior GIS Analyst

Essential Functions:

All the functions listed above and

1.   Maintains system security and system back up.

2.   Assigns, supervises, trains, and provides technical guidance to staff on GIS application uses.

3.   Establishes standards and quality control for data entry procedures.

4.   Coordinates and budgets for the purchasing of GIS software, hardware, and related equipment by researching item specifications, costs, and delivery requirements, and preparing budget estimates for agency and vendor purchases of GIS equipment.

5.   Prepares department GIS budget.

6.   Updates GIS analytical functions and related technologies (Internet/Intranet, Oracle/SDE).

7.   Prepares and evaluates plans for procuring professional services as needed.

8.   Evaluates departmental RFPs and other contracts requiring GIS support to ensure consistency with SanGIS data use policies and quality of contracted GIS products and services proposed for the department.

9.   Supervises a team of GIS Analysts within DPLU and provides technical guidance and leadership to technical staff within the HHSA.

10.   Provides technical guidance to staff involved in interpreting satellite photos, preparing vegetation maps, and digitizing data for conversion to GIS usable formats.

11.   Coordinates data acquisition and exchanges, project scheduling, and software training with outside agencies.

12.   Attends Board of Supervisors and Chief Administrative Officer briefings upon request.

13.   Provides scientific and technical information to staff.

14.   Constructs or develops scientific/statistical experiments and analytical computer models to support decision-making.

15.   Manages the preparation of reports detailing the results of these experiments or model outputs.

■ KNOWLEDGE, SKILLS, AND ABILITIES

<u>Knowledge of:</u>

The following apply to all classes:

– Principles and practices of system administration using GIS applications, databases, and mapping information systems.
– Principles of hardware and software installation, testing, and operation for GIS applications.
– Research methods and techniques related to collecting, analyzing, and evaluating geographic/land use related data.
– Environmental issues related to biology, geology, geography, land use, and environmental management.
– County customer service objectives and strategies.

<u>GIS Analyst (in addition to the above):</u>

– Principles of computer programming logic and concepts related to GIS and relational database management system (RDMS) software platforms.
– Methods and techniques used for interpreting maps of various media such hard copy maps, aerial photos, and satellite imagery, and digitizing data for conversion to GIS usable formats.
– Purchasing principles and practices and cost factor analysis.
– Lead work and training principles and practices.

<u>Senior GIS Analyst (in addition to the above):</u>

– Budget preparation methods and techniques .
– Grant and RFP writing and editorial review methods.
– Project management techniques.
– Scientific report writing protocol.
– Staff management and discipline techniques, including supervision and training principles and practices.

<u>Skills and Abilities to:</u>

The following apply to all classes:

– Operate and maintain computer equipment: terminals, printers, digitizers, electrostatic plotters, and other peripheral equipment or workstations.
– Provide technical guidance to staff on GIS applications.
– Research GIS hardware and software equipment and applications and make recommendations for purchase.
– Define user needs and make recommendations.
– Digitize data for conversion to GIS usable formats.
– Analyze a variety of geographic and mapping data and develop logical conclusions and solutions.
– Communicate effectively orally and in writing.
– Create fields and analytical files for maps, plots, and charts.
– Establish effective and cooperative working relationships with departmental staff and representativ es from outside agencies.
– Establish effective working relationships with management, employees, employee representatives, and the public representing diverse cultures and backgrounds.
– Treat County employees, representatives of outside agencies, and members of the public with courtesy and respect.
– Assess the customer's immediate needs and ensure customer's receipt of needed services through personal service or referral.
– Exercise appropriate judgment in answering questions and releasing information; analyze and project consequences of decisions and/or recommendations.

<u>Senior GIS Analyst (in addition to the above):</u>

– Serve on inter-governmental committees and task forces and provide GIS technical expertise.
– Develop and implement a GIS.
– Plan and coordinate multi-disciplinary work efforts in order to meet timelines.
– Analyze complex problems and logically identify solutions.
– Supervise, plan, and schedule technical staff to optimize efficiency.

■ EDUCATION/EXPERIENCE

Education, training, and/or experience that demonstrate possession of the knowledge, skills, and abilities listed above. Examples of qualifying education/experience are: possession of a Bachelor's degree from an accredited college or university in geography, earth sciences, civil engineering, urban planning, information technology, biology with an emphasis in GIS, computer science, or a closely related field, OR, successful completion of a college-level GIS certificate program, AND

GIS Analyst Trainee:

1.   One (1) year of progressively responsible GIS experience administering and operating GIS applications using ARC/INFO or similar type software to develop GIS data, digital maps, or other digital displays for land use or spatial analysis.

GIS Analyst:

1.   Two (2) years of progressively responsible experience as a GIS Trainee with the County of San Diego, OR

2.   Three (3) years of progressively responsible GIS experience administering and operating GIS applications using ARC/INFO or similar type software to develop GIS data, digital maps, or other digital displays for land use or spatial analysis.

Senior GIS Analyst:

1.   Three (3) years of full-time experience as a GIS Analyst with the County of San Diego administering and operating a GIS system using ARC/INFO or similar type software to develop GIS data, digital maps, or other digital displays for land use or spatial analysis, OR

2.   Four (4) years of full-time experience administering and operating a GIS system in a large organization using ARC/INFO or similar type software to develop GIS data, digital maps, or other digital displays used for land use or spatial analysis, OR

Note: A master's degree from an accredited college or university in geography, urban studies, environmental sciences, computer science, or a closely related field may substitute for one (1) year of the experience required for GIS Analyst or Senior GIS Analyst.

■ ESSENTIAL PHYSICAL CHARACTERISTICS

The physical characteristics described here are representative of those that must be met by an employee to successfully perform the essential functions of the classification(s). Reasonable accommodation may be made to enable an individual with qualified disabilities to perform the essential functions of a job, on a case-by-case basis.

Continuous upward and downward flexion of the neck. Frequent: sitting, repetitive use of hands to operate computers, printers, and copiers. Occasional: walking, standing, bending and twisting of neck, bending and twisting of waist, squatting, simple grasping, reaching above and below shoulder level, and lifting and carrying files weighing up to 10 pounds.

■ SPECIAL NOTES, LICENSES, OR REQUIREMENTS

License

A valid California class C driver's license, which must be maintained throughout employment in this class, is required at time of appointment, or the ability to arrange necessary and timely transportation for field travel. Employees in this class may be required to use their own vehicle.

Certification/Registration

URISA sponsored GISCI certification is highly desirable for the GIS Analyst and Senior GIS Analyst positions.

Working Conditions

Office environment; exposure to computer screens and other basic office equipment.

Background Investigation

Must have a reputation for honesty and trustworthiness. Misdemeanor and/or felony convictions may be disqualifying depending on type, number, severity, and recency. Prior to appointment, candidates will be subject to a background investigation.

Probationary Period

Incumbents appointed to permanent positions in these classes shall serve a probationary period of 12 months (Civil Service Rule 4.2.5).

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Senior Geographic Information Systems Analyst (Class No. 003506)	Union Code: PR	Variable Entry: Y